

WHAT IS CLAIMED IS:

1. A method for avoiding objects along a path programmed into a robot comprising the following steps in the order named:
 - (a) establishing a field of view for an electronic imager of said robot along said path,
 - 5 (b) obtaining object location information in said field of view,
 - (c) deriving a population coded control signal from said object location information, and
 - (d) transmitting said control signal to said robot, thereby allowing said robot to avoid said object.
2. The method of Claim 1 where deriving said population coded control signal comprises the following steps in the order named:
 - (a) processing a population coded motion energy algorithm that decomposes a video stream of said object location information into
5 spatial and temporal frequency components,
 - (b) processing a population coded velocity algorithm that recombines said spatial and temporal frequency components corresponding to said object and provides a velocity output, thereby identifying how said object is moving in said field of view,
 - 10 (c) processing a population coded rotation algorithm that determines if said electronic imager is turning and provides a turning information output,

- 15 (d) processing a population coded translation algorithm that transforms
said velocity output of said velocity algorithm into a speed signal and
calculates a distance between said object and said electronic imager
providing a strategic control vector and a tactical control vector, and
- (e) processing a population coded navigation algorithm where said
strategic control vector, said tactical control vector, and said turning
information output are used to derive said population coded control
20 signal.
- 3. A method for deriving a distance from an object to an electronic imager
comprising the following steps in the order named:

 - (a) establishing a field of view for said electronic imager,
 - (b) obtaining object location information in said field of view,
 - 5 (c) deriving said distance from said object to said electronic imager by
processing a population coded set of algorithms.
- 4. The method of claim 3 where processing said population coded set of
algorithms comprises the following steps in the order named:

 - 5 (a) processing a population coded motion energy algorithm that
decomposes a video stream of said object location information into
spatial and temporal frequency components,
 - (b) processing a population coded velocity algorithm that recombines
said spatial and temporal frequency components corresponding to
said object and provides a velocity output, thereby identifying how
said object is moving in said field of view, and

- 10 (c) processing a population coded translation algorithm that transforms said velocity output of said velocity algorithm into a speed signal and calculates said distance between said object and said electronic imager.